

# ZR Series

ZR22™ 2' x 2' LED Troffer

## Product Description

The ZR22™ LED troffer delivers 3200 lumens of superior 90 CRI light quality and is perfect for both new construction and renovation. Powered by Cree TrueWhite® Technology, the slim and lightweight ZR22™ LED troffer boasts an efficacious 90 LPW along with 0-10V dimming to meet local energy codes. The ZR22™ LED troffer embodies a breakthrough in balancing energy savings, visual comfort and initial cost.

## Performance Summary

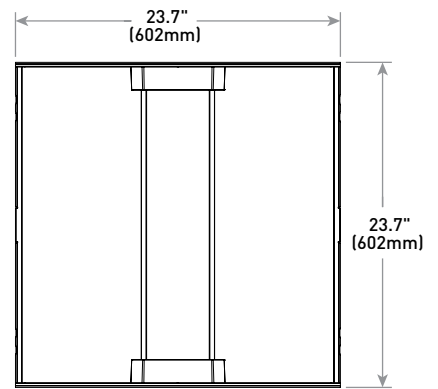
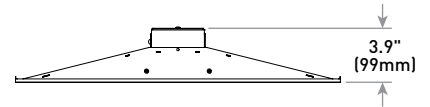
Utilizes Cree TrueWhite® Technology
<b>Efficacy:</b> 90 LPW
<b>Initial Delivered Lumens:</b> 3,200 lumens
<b>Input Power:</b> 35 watts
<b>CRI:</b> 90 CRI
<b>CCT:</b> 3500K, 4000K
<b>Input Voltage:</b> 120-277 VAC or 347 VAC
<b>Limited Warranty*:</b> 10 years
<b>Controls:</b> 0-10V dimming to 5%
<b>Mounting:</b> Recessed*

\* See <http://lighting.cree.com/warranty> for warranty terms

\* Acceptable for use with standard 9/16 T-Bar or larger when installed per installation instructions. Consult factory for non-standard grid applications

## Accessories

Field-Installed	
<b>Drywall Grid Adapter</b> <a href="#">DGA-22WHT</a>	<b>Wireless 0-10V Dimming/Switching Interface with Cree Smartcast® Technology</b> <a href="#">CIF-10V</a> - For use with luminaires with 10V controls when integral SmartCast isn't available
<b>Surface Mount Kit</b> <a href="#">SMK-ZR22</a> - Not for use with EB14	<b>Cree SmartCast® Technology Configuration Tool</b> <a href="#">CCT-CWC-1</a> - One required per project when CIF-10V is selected
<b>6' Flexible Power Whip</b> <a href="#">PW-18/4-06-9T-SS</a>	



## Ordering Information

Example: ZR22-32L-35K-10V

ZR22	32L			10V	
Product	Initial Delivered Lumens	CCT	Voltage	Control	Options
ZR22	32L 35W, 3,200 Lumens – 90 LPW	35K 3500K 40K 4000K	Blank 120-277 Volt 34 347 Volt	10V 0-10V Dimming 5%	<a href="#">EB14 Emergency Backup</a> - 1,400 Lumens - Available on US versions only - Provides 90 minutes of emergency operation



Rev. Date: V4 05/04/2016



## Product Specifications

### CREE TRUEWHITE® TECHNOLOGY

A revolutionary way to generate high-quality white light, Cree TrueWhite® Technology is a patented approach that delivers an exclusive combination of 90+ CRI, beautiful light characteristics, and lifelong color consistency, all while maintaining high luminous efficacy – a true no compromise solution.

### CONSTRUCTION & MATERIALS

- Durable 22 ga. cold rolled steel housing provides strength and uniformity
- Ultra-thin 3.9" (99mm) luminaire height and lightweight design effectively target a broad range of plenum spaces and allow for easy installations
- Luminaire is pre-painted for enhanced smooth finish
- Includes t-bar clips and holes for mounting support wires (by others)
- Luminaire sides and ends are hemmed in for safe, easy handling
- Includes lens gasket to prevent ingress of insects
- Not for installation within 3" (76mm) of insulation

### OPTICAL SYSTEM

- Unique luminaire design creates perfect balance of both horizontal and vertical illumination
- Optimized smooth acrylic lens eliminates pixelation and delivers a low-glare, diffused light distribution

### ELECTRICAL SYSTEM

- Cree born components including highly efficacious Cree® LED chips along with an integral high-efficiency Cree® driver
- **Power Factor:** = 0.9 nominal
- **Input Power:** Stays constant over life
- **Input Voltage:** 120-277V or 347V, 50/60Hz
- **Operating Temperature Range:** 0°C - + 35°C (32°F - + 95°F)
- **Total Harmonic Distortion:** <20%
- **10V Source Current:** 0.25mA

### CONTROLS

- Continuous dimming to 5% with 0-10V DC control protocol
- For use with Class 2 dimming systems only. Reference [www.creelink.com/exLink.asp?70982140Z58R34I26620963](http://www.creelink.com/exLink.asp?70982140Z58R34I26620963) for recommended dimming controls and wiring diagrams

### REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for damp locations
- Designed for indoor use
- UL924 (EB option)
- DLC qualified. Please refer to [www.designlights.org/QPL](http://www.designlights.org/QPL) for most current information
- RoHS compliant. Consult factory for additional details
- Meets FCC Part 15, Subpart B, Class A standards for conducted and radiated emissions

Electrical Data*						
Initial Delivered Lumens	System Watts 120-347V	Total Current				
		120V	208V	240V	277V	347V
32L	35	0.29	0.21	0.18	0.13	0.11
32L w/EB14 Option	40	0.34	0.24	0.21	0.16	N/A

\* Electrical data at 25°C (77°F). Actual wattage may differ by +/- 10% when operating between 120-347V +/-10%

Recommended ZR Series Lumen Maintenance Factors (LMF) <sup>1</sup>					
Ambient	Initial LMF	25K hr Projected <sup>2</sup> LMF	50K hr Projected <sup>2</sup> LMF	75K hr Projected <sup>2</sup> LMF	100K hr Calculated <sup>3</sup> LMF
0°C (32°F)	1.05	0.99	0.96	0.92	0.88
5°C (41°F)	1.04	0.99	0.95	0.91	0.87
10°C (50°F)	1.03	0.98	0.94	0.90	0.86
15°C (59°F)	1.02	0.97	0.93	0.89	0.86
20°C (68°F)	1.01	0.96	0.92	0.88	0.85
25°C (77°F)	1.00	0.95	0.91	0.87	0.84
30°C (86°F)	0.99	0.94	0.90	0.86	0.83
35°C (95°F)	0.98	0.93	0.89	0.86	0.82

<sup>1</sup> Lumen maintenance values at 25°C are calculated per TM-21 based on LM-80 data and in-situ luminaire testing

<sup>2</sup> In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing (DUT) i.e. the packaged LED chip

<sup>3</sup> In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing (DUT) i.e. the packaged LED chip

## Application Reference

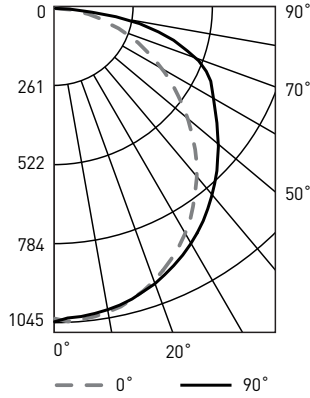
Open Space					
Spacing	Lumens	Wattage	LPW	w/ft <sup>2</sup>	Average fc
8 x 8	3,200	35	91	0.66	56
8 x 10				0.55	46
10 x 10				0.44	37
10 x 12				0.35	30

<sup>9</sup> ceiling: 80/50/20 reflectances; 2.5' workplane, open room. LLF: 1.0 Initial Open Space: 50' x 40' x 9'

**Photometry**

**ZR22-32L-40K BASED ON DTC REPORT TEST #: PL02844-001**

Luminaire photometry has been conducted by a NVLAP accredited testing laboratory in accordance with IESNA LM-79-08. IESNA LM-79-08 specifies the entire luminaire as the source resulting in a luminaire efficiency of 100%.



Coefficients Of Utilization – Zonal Cavity Method				
RC %:	80			
RW %:	70	50	30	10
RCR: 0	119	119	119	119
1	107	102	97	93
2	97	88	81	74
3	88	77	68	61
4	80	68	58	51
5	74	60	51	43
6	68	54	45	38
7	63	49	40	33
8	59	45	36	29
9	55	41	32	26
10	51	38	30	24

Effective Floor Cavity Reflectance: 20%

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	808	N/A	24.7%
0-40	1,328	N/A	40.5%
0-60	2,394	N/A	73.1%
0-90	3,274	N/A	100%
0-180	3,274	N/A	100%

Average Luminance Table (cd/m <sup>2</sup> )				
Vertical Angle	Horizontal Angle			
		0°	45°	90°
	45°	2,740	2,927	3,131
55°	2,564	2,943	3,339	
65°	2,358	3,111	3,631	
75°	2,101	3,614	4,600	
85°	1,757	3,468	4,184	

Reference [lighting.cree.com/products/indoor/troffers/zr-series](http://lighting.cree.com/products/indoor/troffers/zr-series) for detailed photometric data